

*Blues* and *purples* may be either of the second or third order, but the best are of the third. Thus the Colour of violets seems to be of that order, because their Syrup by acid Liquors turns red, and by urinous and alcalizale turns green. For since it is of the nature of Acids to dissolve or attenuate, and of Alcalies to precipitate or incrassate, if the purple Colour of the Syrup was of the second order, an acid Liquor by attenuating its ting-ing corpuscles would change it to a red of the first order, and an Alcaly by incrassating them would change it to a green of the second order; which red and green, especially the green, seem too imperfect to be the Colours produced by these changes. But if the said purple be supposed of the third order, its change to red of the second, and green of the third, may without any inconvenience be allowed.

If there be found any Body of a deeper and less reddish purple than that of the violets, its Colour most probably is of the second order. But yet their being no Body commonly known whose Colour is constantly more deep than theirs, I have made use of their name to denote the deepest and least reddish purples, such as manifestly transcend their Colour in purity.

The *blue* of the first order, though very faint and little, may possibly be the Colour of some substances; and particularly the azure Colour of the Skys seems to be of this order. For all vapours when they begin to condense and coalesce into small parcels, become first of that bigness whereby such an Azure must be reflected before they can constitute Clouds of other Colours. And so this being the first Colour which vapors begin to reflect, it ought to be the Colour of the finest and most trans-

transparent Skys in which vapors are not arrived to that grossness requisite to reflect other Colours, as we find it is by experience.

*Whiteness*, if most intense and luminous, is that of the first order, if less strong and luminous a mixture of the Colours of several orders. Of this last kind is the whiteness of Froth, Paper, Linnen, and most white substances; of the former I reckon that of white metals to be. For whilst the densest of metals, Gold, if foliated is transparent, and all metals become transparent if dissolved in menstruums or vitrified, the opacity of white metals ariseth not from their density alone. They being less dense than Gold would be more transparent than it, did not some other cause concur with their density to make them opaque. And this cause I take to be such a bigness of their particles as fits them to reflect the white of the first order. For if they be of other thickneses they may reflect other Colours, as is manifest by the Colours which appear upon hot Steel in tempering it, and sometimes upon the surface of melted metals in the Skin or Scoria which arises upon them in their cooling. And as the white of the first order is the strongest which can be made by Plates of transparent substances, so it ought to be stronger in the denser substances of metals than in the rarer of Air, Water and Glass. Nor do I see but that metallic substances of such a thickness as may fit them to reflect the white of the first order, may, by reason of their great density (according to the tenour of the first of these Propositions) reflect all the Light incident upon them, and so be as opaque and splendent as its possible for any Body to be. Gold, or Copper mixed with less than half their weight of